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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,565	12/31/2001	Norm Hendrickson	47545/DMC/V165	4012

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EXAMINER

PARK, EDWARD K

ART UNIT	PAPER NUMBER
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2116

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,565

Applicant(s)

HENDRICKSON, NORM

Examiner

Edward K. Park

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) 1-18, 21-47 and 51-61 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19, 20 and 48-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/1/02
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 20050209
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-6, drawn to a de-skew system with data channels over which data is transmitted, classified in class 713, subclass 500.
 - II. Claims 7-13, 31-41, and 60-61, drawn to the reception of data in de-skew systems and methods, classified in class 713, subclass 500.
 - III. Claims 14-18 and 21-30, drawn to centering a sample in a de-skew method, classified in class 713, subclass 503.
 - IV. Claims 19-20 and 48-50, drawn to aligning a sample of data in a de-skew method, classified in class 713, subclass 503.
 - V. Claims 51-59, drawn to coupling upstream and downstream units in a de-skew system, classified in class 713, subclass 500.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as in systems that only transmit data, and do not receive it. See MPEP § 806.05(d).

Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as in systems in which no data are centered. See MPEP § 806.05(d).

Inventions I and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as in systems in which data are not adjusted. See MPEP § 806.05(d).

Inventions I and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as in systems that contain no upstream or downstream units. See MPEP § 806.05(d).

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as systems in which no data are centered. See MPEP § 806.05(d).

Inventions II and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as in systems in which data are not adjusted. See MPEP § 806.05(d).

Inventions II and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as in systems that contain no upstream or downstream units. See MPEP § 806.05(d).

Inventions III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are

shown to be separately usable. In the instant case, invention III has separate utility such as in systems in which data are not adjusted. See MPEP § 806.05(d).

Inventions III and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as in systems that contain no upstream or downstream units. See MPEP § 806.05(d).

Inventions IV and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention IV has separate utility such as in systems that contain no upstream or downstream units. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II, III, IV and V, the search for Group II is not required for Groups I, III, IV, and V, the search for Group III is not required for Groups I, II, IV, and V, the search for Group IV is not required for Groups I, II, III, and V, and the search for Group V is not required for Groups I, II, III, and IV, restriction for examination purposes as indicated is proper.

3. Claim 42 links inventions I and II. The restriction requirement between the linked inventions is subject to the nonallowance of the linking claim, claim 42. Upon the allowance of the linking claim, the restriction requirement as to the linked inventions shall be withdrawn and any claim depending from or otherwise including all the

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limitations of the allowable linking claim will be entitled to examination in the instant application. Applicants are advised that if any such claim depending from or including all the limitations of the allowable linking claim is presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. During a telephone conversation with Daniel Cavanagh on February 10, 2005, a provisional election was made without traverse to prosecute the invention of Group IV, claims 19-20 and 48-50. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-18, 21-47, and 51-61 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

DETAILED ACTION

Double Patenting

6. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 19 and 20 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 19 and 20 of copending Application No. 10/036,563.

This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claims 48 and 49 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 37 of copending Application No. 10/036,563 and claim 12 of copending Application No. 10/036,548. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

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patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 50 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 37 of copending Application No. 10/036,563 and claim 12 of copending Application No. 10/036,548. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious for the sample channel to provide sample data from the second unit to the first unit, as opposed to from the first unit to the second unit, as is disclosed in the listed copending applications. The motivation would have been for a mutual exchange of information and communication between the first and second units with regard to the sample data.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 48 rejected under 35 U.S.C. 102(b) as being anticipated by Thacker (U.S. 5,313,501). Thacker discloses a method of deskewing parallel data lines comprising: providing parallel data over a plurality of parallel data lines (column 1, lines 66-68); successively providing sample data over a sample channel (column 4, lines 35-39, wherein the sample data comprises the comparison signals C(i)), the sample data corresponding to data of the parallel data (column 4, lines 56-60); using the sample data to align the parallel data (column 4, lines 58-63).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19 and 20 rejected under 35 U.S.C. 102(b) as being anticipated by Ems (U.S. 4,482,826) in view of Thacker (U.S. 5,313,501).

Regarding claim 19, Ems discloses a de-skew method comprising: determining a channel number for a forward data sample (column 9, lines 13-15; see also lines 19-23); retrieving data from a data channel identified by the channel number (column 7, lines 32-34), the data channel being a first data channel; comparing the data from the first data channel with a slice of data from the forward data sample (column 7, lines 46-48, wherein the data is the delay imparted by the first data channel, and the forward data sample is the desired delay); and adjusting timing of the forward data sample when the

data from the first data channel corresponds to the slice of the data (column 7, lines 55-59). However, Ems does not disclose comparing the data from the first data channel with a slice of *delayed* data from the forward data sample. Thacker teaches a de-skew method comprising: comparing the data from the first data channel with a slice of data from the forward data sample (column 4, lines 35-39); and adjusting timing of the forward data sample when the data from the first data channel corresponds to the slice of the data (column 4, lines 56-63), similar to Ems. Thacker further teaches the method wherein the slice of data from the forward data sample is delayed (column 1, lines 10-13). At the time of invention, it would have been obvious to combine the disclosure of Ems's non-delayed data de-skew method with Thacker's delayed data de-skew method. The motivation for doing so would have been to predict and compensate for skew in the data signal.

Regarding claim 20, Ems and Thacker teach all of the limitations of claim 19, as listed above. Ems further teaches the method wherein adjusting time of the forward data sample comprises delaying the forward data sample by an amount of time the slice of delayed data is delayed (column 7, lines 49-51, 58-59).

Claims 49 and 50 rejected under 35 U.S.C. 103(a) as being unpatentable over Thacker (U.S. 5,313,501) in view of Suzuki (U.S. 6,079,035).

Regarding claim 49, Thacker discloses all of the limitations of claim 48, as listed above. Thacker further discloses the method wherein the parallel data lines provide parallel data from a first unit to a second unit (column 2, line 67 through column 3, line 1). However, Thacker does not disclose the method wherein the sample channel

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provides sample data from the first unit to the second unit. Suzuki teaches a method of deskewing parallel data lines comprising: providing parallel data over a plurality of parallel data lines (column 3, lines 57-61); providing sample data over a sample channel (column 4, lines 59-60); and using the sample data to align the parallel data (column 2, lines 19-24), similar to Thacker. Suzuki further teaches the method wherein the parallel data lines provide parallel data from a first unit to a second unit (column 3, lines 13-20) and the sample channel provides sample data from the first unit to the second unit (column 4, lines 59-60). At the time of invention, it would have been obvious to one of ordinary skill in the art to combine the disclosure of Thacker's deskew method with the teachings of Suzuki's first-to-second sample data provision. The motivation for doing so would have been for a quicker and more efficient skew detection and compensation.

Regarding claim 50, Thacker discloses all of the limitations of claim 48, as listed above. Thacker further discloses the method wherein the parallel data lines provide parallel data from a first unit to a second unit (column 2, line 67 through column 3, line 1). However, Thacker does not disclose the method wherein the sample channel provides sample data from the second unit to the first unit. Suzuki teaches a method of deskewing parallel data lines comprising: providing parallel data over a plurality of parallel data lines (column 3, lines 57-61); providing sample data over a sample channel (column 4, lines 59-60); and using the sample data to align the parallel data (column 2, lines 19-24), similar to Thacker. Suzuki further teaches the method wherein the parallel data lines provide parallel data from a first unit to a second unit (column 3, lines 13-20) and the sample channel provides sample data from the second unit to the first unit

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(column 6, lines 1-5). At the time of invention, it would have been obvious to one of ordinary skill in the art to combine the disclosure of Thacker's deskew method with the teachings of Suzuki's second-to-first unit sample data provision. The motivation for doing so would have been for the exchange of data between the first and second units without having to reassess the amount of skew by which the data needed to be compensated.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Adderly (U.S. 4,234,956), Nossen (U.S. 4,669,091), Loeb (U.S. 5,157,530), Hutchinson (U.S. 5,408,473), Collins (U.S. 6,031,837), Nolan (U.S. 6,044,121), and Koyanagi (U.S. 6,636,993).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward K. Park whose telephone number is (571) 272-5859. The examiner can normally be reached on M-F, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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